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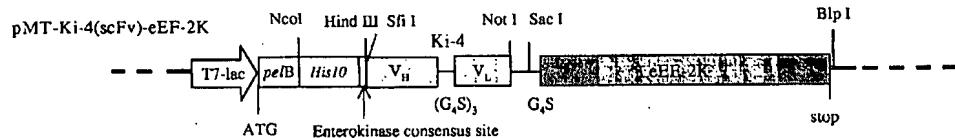
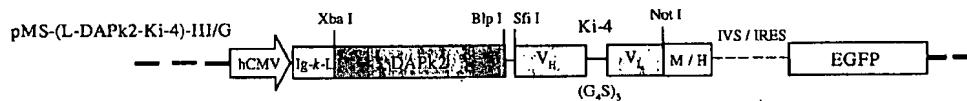
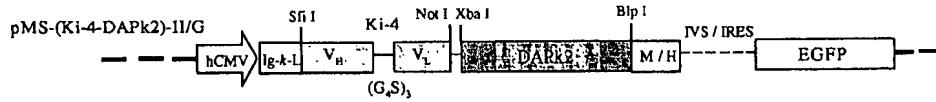
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[Continued on next page]

(54) Title: IMMUNOKINASES



(57) Abstract: A synthetic, soluble, endogenous complex formed from at least one component A and at least one component B, whereby component A comprises a binding domain for extra-cellular surface structures that internalize upon binding of component A of said complex, and component B has a constitutive catalytic kinase activity and effects cell biosynthesis/signalling including cell death after internalization. The complex allows to influence the growth and the physiology of cells. In particular said complex, nucleic acid molecules encoding it, cells transfected or transformed with these nucleic acid molecules are usable for the preparation of medicaments for the treatment of proliferative diseases, inflammatory diseases, allergies and autoimmune diseases.

WO 2005/068616 A3



- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP2005/050131

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C12N9/12 C07K19/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C12N C07K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, BIOSIS, PAJ, Sequence Search, EMBASE, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 670 324 A (LITTMAN DAN ET AL) 23 September 1997 (1997-09-23) abstract figures 1,2 column 1, paragraph 1; examples 1-7D column 1, paragraph 2 column 2, paragraph 1 column 3, paragraph 4 - column 4, paragraph 2 column 6, paragraph 4 column 7, paragraph 3 column 9, paragraph 2 claims 1-10 ----- -/-	1-9,11, 12,14-24

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the International filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the International filing date but later than the priority date claimed

- *T* later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the International search report
22 August 2005	29/08/2005
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx.31 651 epo nl. Fax: (+31-70) 340-3016	Authorized officer Keller, Y

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP2005/050131

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2002/176851 A1 (SEED ET AL.) 28 November 2002 (2002-11-28) abstract figure 1 paragraph '0003! paragraph '0023! paragraph '0026! paragraph '0031! - paragraph '0034!; claims 1-40 ----- US 5 935 835 A (MARSHALL LISA ET AL.) 10 August 1999 (1999-08-10) abstract column 9, line 52 - column 10, line 33; claims 1-12 ----- US 2002/151684 A1 (MAYER ET AL.) 17 October 2002 (2002-10-17) abstract paragraph '0003! paragraph '0004! paragraph '0009! - paragraph '0011! column 34 ----- T HAXHINASTO S. ET AL.: "synergistic B cell activation by CD40 and the B cell antigen receptor" THE JOURNAL OF BIOLOGICAL CHEMISTRY, vol. 279, no. 4, 2004, pages 2575-2582, XP002273864 -----	1-9,11, 12,14-24 1-9,11, 12,14-24 1-9,11, 12,14-24

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2005/050131

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.: 10, 13 because they relate to subject matter not required to be searched by this Authority, namely:
Although claims 23 and 24 are directed to a diagnostic method practised on the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. Claims Nos.: 10, 13 because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210
3. Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.1

Although claims 23 and 24 are directed to a diagnostic method practised on the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.

Continuation of Box II.2

Claims Nos.: 10, 13

Present claims 10, 13 relate to an extremely large number of possible compounds/products. In fact a lack of clarity (and conciseness) within the meaning of Article 6 PCT arises to such an extent as to render a meaningful search of the claims impossible.

In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Independent of the above reasoning, the claims also lack clarity (Article 6 PCT). An attempt is made to define the product/compound by reference to a result to be achieved. Again, this lack of clarity in the present case is such as to render a meaningful search over the whole of the claimed scope impossible.

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.5), should the problems which led to the Article 17(2) declaration be overcome.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-9, 11, 12, 14-24

a complex of a component A and B wherein A comprises a binding domain for cellular surface structures and B is a kinase. Said complexe has SEQ ID No 2

2. claims: 1-9, 11, 12, 14-24

a complex of a component A and B wherein A comprises a binding domain for cellular surface structures and B is a kinase. Said complexe has SEQ ID No 4

3. claims: 1-9, 11, 12, 14-24

a complex of a component A and B wherein A comprises a binding domain for cellular surface structures and B is a kinase. Said complexe has SEQ ID No 6

4. claims: 1-9, 11, 12, 14-24

inventions 4-3183.

a complex of a component A and B wherein A comprises a binding domain for cellular surface structures and B is a kinase. Wherein A selected from the list as in claims 2 and 3 (at least 54 compounds) and B as in claims 6-9 (ie. at least 59 kinases listed)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/EP2005/050131

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
US 5670324	A	23-09-1997	US	5439819 A		08-08-1995
			US	5504000 A		02-04-1996
US 2002176851	A1	28-11-2002	US	6410014 B1		25-06-2002
			US	5912170 A		15-06-1999
			AU	703125 B2		18-03-1999
			AU	4767596 A		11-09-1996
			CA	2209301 A1		29-08-1996
			CZ	9702601 A3		13-05-1998
			EP	0812352 A1		17-12-1997
			FI	973466 A		22-08-1997
			HU	9800459 A2		29-06-1998
			JP	11500621 T		19-01-1999
			NO	973863 A		22-10-1997
			NZ	302090 A		28-01-2000
			NZ	501340 A		24-12-2004
			RU	2225870 C2		20-03-2004
			WO	9626265 A1		29-08-1996
			ZA	9601476 A		06-03-1997
			AT	236973 T		15-04-2003
			AU	712245 B2		04-11-1999
			AU	6476798 A		02-07-1998
			AU	686646 B2		12-02-1998
			AU	7314094 A		13-02-1995
			CA	2166102 A1		26-01-1995
			CZ	9503408 A3		14-08-1996
			DE	69432487 D1		15-05-2003
			DE	69432487 T2		08-04-2004
			DK	804552 T3		28-07-2003
			EP	0804552 A1		05-11-1997
			ES	2197166 T3		01-01-2004
			FI	960178 A		15-01-1996
			HU	74252 A2		28-11-1996
			JP	9500020 T		07-01-1997
			JP	3588115 B2		10-11-2004
			JP	2004222735 A		12-08-2004
			NO	960175 A		15-03-1996
			NZ	269312 A		26-02-1998
			PT	804552 T		29-08-2003
			RU	2158305 C2		27-10-2000
			WO	9502686 A1		26-01-1995
			US	2003053994 A1		20-03-2003
			US	6004811 A		21-12-1999
			US	6392013 B1		21-05-2002
			ZA	9405204 A		30-05-1995
			US	6284240 B1		04-09-2001
			US	2004005334 A1		08-01-2004
			US	5851828 A		22-12-1998
			US	6753162 B1		22-06-2004
			US	5843728 A		01-12-1998
			US	2003138410 A1		24-07-2003
			AT	232107 T		15-02-2003
US 5935835	A	10-08-1999	EP	0835937 A2		15-04-1998
			JP	10117788 A		12-05-1998
			JP	2004089190 A		25-03-2004
US 2002151684	A1	17-10-2002	AU	1676202 A		14-01-2002

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP2005/050131

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
US 2002151684	A1	AU	6058500 A	31-01-2001
		WO	0202746 A2	10-01-2002
		US	2002037999 A1	28-03-2002
		WO	0101137 A1	04-01-2001